

## REMARKS

In the patent application, claims 15, 17-22, 24, 25, 27 and 34-48 are pending. In the office action, all pending claims are rejected.

At section 2, claims 15, 17, 24, 25, 34, 37, 38, 40, 41 – 43 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Krentz et al.* (GB 2358991, hereafter referred to as *Krentz*) in view of *Ichikawa et al.* (EP 0946011 A2, hereafter referred to as *Ichikawa*) and further in view of *Bannerman* (U.S. Patent No. 4,001,696).

Regarding claims 15 and 17, the Examiner states that *Krentz* discloses an integrated broadcast reception system for use in a handheld telecommunications device for receiving broadcast signals, wherein the handheld telecommunications device has a device body, the reception system comprising: an electrically non-conductive substrate located inside the device body, an electrically conductive element disposed on the substrate for receiving the broadcast signals, and signal processing module (28, Figure 2) disposed on the substrate adjacent and electrically connected to one end of the electrically conductive element, responsive to the received signals, for processing the received signals (Figures 1 and 7; p. 3, line 25 – p.7, line 28).

It is respectfully submitted that item 28 in Figure 2 is not a signal processing module for processing the received broadcast signals.

At p.4, lines 5-18, *Krentz* discloses that the processor (MCU 28) controls the switch 22 either

- (1) to route AM band radio frequency signals received by the auxiliary antenna 20 to the AM broadcast receiver 24 so as to allow a user to listen to an AM radio program, or
- (2) to route AM band radio frequency signals associated with a peripheral device 42 to the application interface circuit 26. At p.5, line 33 to p.6, line 13, *Krentz* discloses that the peripheral device 42 is a RFID system peripheral. As shown in Figure 2, the signal 114 conveyed from the peripheral device 42 to the process 28 is a signal presence indicator (SPI). This indicator is generated by a 400 kHz receiver 104 to indicate the presence of an interrogation signal. In response to an SPI 114 value that indicates the presence of an interrogation signal, the processor 28 generates an identification code 116.

In the first situation where the processor 28 controls the switch 22 to route AM band radio frequency signals to the AM receiver 24, the processor does not receive or process broadcast signals.

In the second situation where the processor 28 controls the switch 22 to route AM band radio frequency signals to the application interface circuit, the signal 114 received by the processor 28 (see Figure 3) is a signal presence indicator (SPI) provided by the 400kHz receiver, and not AM frequency signals from the antenna 20. As with the first situation, the processor does not receive or process broadcast signals.

In contrast, the claimed invention has the limitation that the signal processor is electrically connected to the conductive element to process received broadcast signals. *Krentz* does not disclose such a feature.

For the above reasons, *Krentz* is irrelevant to the claimed invention.

The Examiner also cites *Ichikawa* for disclosing a receiver for receiving digital audio broadcast programs and FM broadcast programs wherein the broadcast signals are frequency modulated; broadcast signals are digital broadcast signals; and the signal processing signal module is for selecting broadcast frequency band. The Examiner further cites *Bannerman* for disclosing an electronic antenna for receiving broadcast signals in the frequency range of 88 MHz – 108 MHz and 53 MHz – 99 MHz (col.1, lines 48-54).

It is respectfully submitted that *Bannerman* discloses a metal pickup plate (10) which can be concealed in the crash panel of an automobile to pick up AM/FM signals. The pickup plate must be connected to a broad-band RF pre-amplifier comprising an input transformer T1, a double-tuned transformer T2 and other switching elements Q1 – Q3. Such a pickup plate must be large in size even for FM frequencies because of the lambda/2 requirement. In addition, the pre-amplifier comprises transformers which are also generally very large in size.

It is difficult to imagine how the metal pickup plate 10 and the transformers in the pre-amplifier as disclosed in *Bannerman* can be fitted inside a handheld telecommunications device for receiving broadcast signals. Accordingly, it is not believed that one of ordinary skill in the art would reasonably be motivated to go to the field of automotive crash panel system to solve the problem of implementing an FM antenna in a hand-held telecommunication device such as a

mobile phone. Physically, the crash panel pick-up plate is incompatible with the requirements for a broadcast signal receiver in a hand-held telecommunication device.

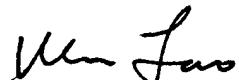
In sum, *Krentz* does not disclose a signal processor located on the substrate adjacent to and electrically connected to the electrically conductive element for processing received broadcast signals in the 88MHz-108MHz range. *Bannerman* fails to disclose an FM antenna system that can be modified to fit inside the device body of a handheld telecommunication device.

For the above reasons, the claimed invention is clearly distinguishable over the cited *Krentz*, *Ichikawa* and *Bannerman* references.

## CONCLUSION

Claims 15, 17-22, 24, 25, 27 and 34-48 are allowable. Early allowance of all pending claims is earnestly solicited.

Respectfully submitted,



---

Kenneth Q. Lao  
Attorney for the Applicant  
Registration No. 40,061

WARE, FRESSOLA, VAN DER SLUYS  
& ADOLPHSON LLP  
Bradford Green, Building Five  
755 Main Street, P.O. Box 224  
Monroe, CT 06468  
Telephone: (203) 261-1234  
Facsimile: (203) 261-5676  
USPTO Customer No. 004955